



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/753,617	01/07/2004	Robert Carl Faubion	31731-1001	6315
5179	7590	10/13/2005	EXAMINER	
PEACOCK MYERS, P.C. 201 THIRD STREET, N.W. SUITE 1340 ALBUQUERQUE, NM 87102				ZETTL, MARY E
			ART UNIT	PAPER NUMBER
			2878	

DATE MAILED: 10/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary	Application No.	Applicant(s)	
	10/753,617	FAUBION, ROBERT CARL	
	Examiner	Art Unit	
	Mary Zettl	2878	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 13 May 2004.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) 13 and 20 is/are allowed.
- 6) Claim(s) 1-12 is/are rejected.
- 7) Claim(s) 14-19 and 21-25 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on January 7, 2004 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>13 May 2004</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____. |

DETAILED ACTION

Drawings

1. The informal drawings are not of sufficient quality to permit examination. Accordingly, replacement drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to this Office action. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action.

Applicant is given a TWO MONTH time period to submit new drawings in compliance with 37 CFR 1.81. Extensions of time may be obtained under the provisions of 37 CFR 1.136(a). Failure to timely submit replacement drawing sheets will result in ABANDONMENT of the application.

Claim Objections

2. Claims 14-19 and 21-25 are objected to because of the following informalities: These independent claims, claim dependence on themselves or claims that have not been made yet. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-6 and 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishibashi (US 5,708,857 A) in view of Myrick (US 5,166,789 A).

Regarding claims 1, 9, and 12 Ishibashi et al. teaches an imaging apparatus for capturing comparative images of two separated viewing areas comprising: a single camera (Abstract, line 1); a visual display apparatus (image sensor; Figure 1, item 7; Abstract, line 5); one or more adjustable image reflectors (mirror; Figure 1, item 3; Abstract lines 5-6) for redirecting images of at least two separated viewing areas to said camera for transmission to said visual display apparatus for side-by-side presentation of the two or more areas viewed to permit comparison of the images of the two or more areas. Ishibashi does not disclose expressly an infrared imaging apparatus, comprising an infrared camera for comparing thermal images. The use of cameras for sensing and displaying IR images is widely known. Myrick teaches an IR camera to obtain IR images (Abstract, lines 1-2) consisting of an infrared imager head (Figure 1, item 16) mounted with its field of view having the same orientation as cameras (Figure 1, items 12 and 14); and a visual display apparatus (Figure 3) for side-by-side presentation of visual and thermal images. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the invention of Fukuda et al. such that an infrared camera was utilized in conjunction with the video camera, as suggested by Myrick, in order to perform simultaneous comparison of IR images.

Regarding claims 2-5, Ishibashi in view of Myrick teaches the limitations set forth in claim 2. Myrick further teaches a computer (infrared data processor; Figure 1, item 20; col. 4, line 38); wherein the computer controls selected functions of the camera, such as thermal image processing (col. 4, lines 38-41) and image analysis (col. 4, lines 45-47). At the time the invention was made, it would have been obvious to one skilled in the art to provide the invention of Ishibashi with a computer such that the camera could be controlled and such that thermal image processing and image analysis could be performed.

Regarding claim 6, Ishibashi in view of Myrick teach the limitations set forth in claim 1. Ishibashi further specifies using a mirror to serve the purpose of a reflector. As can be seen in Figure 1, the mirror (item 3) comprises at least one substantially flat surface.

Regarding claim 10, Ishibashi in view of Myrick teaches the limitations set forth in claim 1. Ishibashi in view of Myrick do not specify the image reflectors having a vertical field of view at least 45 degrees above the horizontal. However, one of ordinary skill in the art would be able to recognize that Ishibashi suggests in Figure 3 that the images produced are from an image reflector having a vertical field of view at least 45 degrees above the horizontal. It would be obvious to one skilled in the art that the image reflectors should have a vertical field of view at least 45 degrees above the horizontal so that the camera captures the entire brake or the entire gear.

Regarding claim 11, Ishibashi in view of Myrick teach the limitations set forth in claim 1. Ishibashi suggests (Figure 2) that the image reflectors have a horizontal field of

view of at least 90 degrees centered on an axis orthogonal to the camera axis in the horizontal plane (col. 3, lines 24-28). It would be obvious to one skilled in the art that the image reflectors should have a horizontal field of view of at least 90 degrees centered on an axis orthogonal to the camera axis in the horizontal plane so that the desired object is enclosed in the field of view.

4. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishibashi (US 5,708,857 A) in view of Myrick (US 5,166,789 A) and further in view of Doyle et al. (US 5,011,243 A).

Regarding claim 7, Ishibashi in view of Myrick teaches the limitations set forth in claim 1. Ishibashi in view of Myrick does not disclose expressly an image reflector comprising at least one substantially parabolic surface. The use of parabolic surfaces for image reflectors is well known in the art. For example, Doyle et al. teaches an infrared microscope with an infrared image reflector (Figure 9, item 108) comprising at least one substantially parabolic surface (col. 6, lines 51-55). At the time the invention was made, it would be well known to one skilled in the art that the infrared camera taught by Ishibashi in view of Myrick could be modified such that one or more image reflectors comprising at least one substantially parabolic surface were provided. It would be well known to one skilled in the art, that if it was desired for the rays to intersect in the focus of the lens that a parabolic mirror should be utilized.

Regarding claim 8, Ishibashi in view of Myrick teaches the limitations set forth in claim 1. Ishibashi in view of Myrick does not disclose expressly an image reflector

comprising at least one substantially convex surface. The use of convex surfaces for image reflectors is well known in the art. Doyle et al. teaches an infrared image reflector comprising at least one substantially convex surface (Figure 1, item 29; col. 3, lines 2-4). At the time the invention was made, it would be within the skill of one skilled in the art, to select a reflector with a convex surface if it was desired that the rays of the divergent beam intersect behind the mirror.

Allowable Subject Matter

5. Claims 13 and 20 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

Prior art teaches infrared detectors for capturing thermal data from selected portions of the undercarriage of a vehicle and a viewing apparatus for displaying thermal data (Dell, US 5,942,753). Prior art additionally teaches infrared cameras with reflectors. Prior art does not teach or make obvious an apparatus with an infrared camera mounted beneath a vehicle undercarriage for capturing thermal images of selected portions of the undercarriage. Prior art further fails to teach a camera to capture two spaced apart thermal images for transmission to a viewing apparatus.

Prior art does not teach or make obvious adjusting the field-of-view of one or more infrared image reflectors and cameras so as to encompass the left and right side running gear and simultaneously displaying the thermal images from each side running gear so as to permit comparison of the heat characteristics.

6. Claims 14-19 and claims 21-25 would be allowable with reference to the proper prior claim.

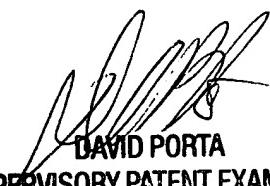
Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mary Zettl whose telephone number is (571) 272-6007. The examiner can normally be reached on M-F 8am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on (571) 272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MZ



DAVID PORTA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800